

**CALIFORNIA ENERGY COMMISSION**

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**STATE OF CALIFORNIA  
ENERGY RESOURCES CONSERVATION  
AND DEVELOPMENT COMMISSION**

California Energy Commission

**DOCKETED  
05-AFC-2C**

TN # 68911

DEC. 18 2012

In the Matter of:

**WALNUT CREEK ENERGY PARK  
PROJECT**

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**Docket No. 05-AFC-2C****Order No. 12-1114-4**

**WALNUT CREEK ENERGY  
CENTER, LLC**

**ORDER APPROVING a Petition to Modify  
Eight (8) and Delete Two (2) Air Quality  
Conditions of Certification**

On September 12, 2012, Walnut Creek Energy Center LLC, the owner/operator of the Walnut Creek Energy Park Project (WCEP), submitted a Petition to Amend the California Energy Commission's (Energy Commission) Decision for the WCEP. The Petition to Amend modified eight (8) and deleted two (2) Air Quality Conditions of Certification (COCs). The proposed modifications to Air Quality COCs **AQ-1, AQ-3, AQ-11, AQ-13, AQ-14, AQ-16, AQ-SC7** and **AQ-19** provided the most current air quality requirements for the WCEP, and **AQ-SC9** and **AQ-17** were deleted as redundant or outdated respectively.

**STAFF RECOMMENDATION**

Energy Commission staff reviewed the petition and found that it complies with the requirements of title 20, section 1769(a) of the California Code of Regulations and recommends approval of Walnut Creek Energy Center, LLC's petition to modify the WCEP Project and amend the above mentioned Conditions of Certification.

**ENERGY COMMISSION FINDINGS**

Based on staff's analysis, the Energy Commission concludes that the proposed changes will not result in any significant impact to public health and safety, or the environment. The Energy Commission finds that:

- The petition meets all the filing criteria of title 20, section 1769(a) of the California Code of Regulations concerning post-certification project modifications;
- The modification will not change the findings in the Energy Commission's Final Decision

- The project will remain in compliance with all applicable laws, ordinances, regulations, and standards, subject to the provisions of Public Resources Code section 25525;
- The proposed modifications to the Air Quality Conditions of Certification will result in a beneficial change by ensuring that the WCEP adheres to the most current air quality requirements and that redundant and outdated requirements are no longer enforced.
- The change is based on information that was not available to the parties prior to Energy Commission certification.

## CONCLUSION AND ORDER

The California Energy Commission hereby adopts Staff's recommendations and approves the following changes to the Commission Decision for the Walnut Creek Energy Park Project. New language is shown as **bold and underlined**, and deleted language is shown in ~~strikeout~~.

## CONDITIONS OF CERTIFICATION

**AQ-SC7** To comply with offset requirements an affiliate of WCE, under common ownership of Edison Mission Energy (EME), has been created to purchase two electric utility steam boilers from AES Huntington Beach, LLC, and will permanently retire these units to qualify for a partial offset exemption on a net megawatt to net megawatt basis (450 MWs). The project owner shall also provide emission reduction credits (ERCs) to offset turbine exhaust and emergency equipment for VOC, PM10 and PM2.5 emissions associated with the increased generating capacity of 50.5 MWs in the form and amount required by the District. RECLAIM Trading Credits (RTCs) shall be provided for NO<sub>x</sub> and SO<sub>x</sub> as is necessary to demonstrate compliance with Condition of Certification **AQ-16**.

The project shall be exempt under District Rule 1304(a)(2) from providing ERCs for VOC, and PM10/PM2.5 for 89.91 percent of the full amount required by the District for these pollutants, and shall provide ERCs at an offset ratio of 1.2:1.0 for the remaining 10.09 percent in accordance with the following:

Pollutant (lb/day)	VOC	PM10/PM2.5
1. Total emissions to be offset	173.82	432.00
2. Emissions not exempt from offsetting under Rule 1304(a)(2) (10.09%)	17.54	43.59
3. ERCs required to offset non-exempt emissions at a ratio of 1.2 lb/day offsets to 1 lb/day non-exempt emissions	21	52

The project owner shall surrender the ERCs for VOC and PM10/PM2.5 from among those that are listed in the table below or a modified list, as allowed by this condition.

If additional ERCs are submitted, the project owner shall submit an updated table including the additional ERCs to the CPM. The project owner shall request CPM approval for any substitutions, modifications, or additions of credits listed.

The CPM, in consultation with the District, may approve any such change to the ERC list provided that the project remains in compliance with all applicable laws, ordinances, regulations, and standards, the requested change(s) will not cause the project to result in a significant environmental impact, and the District confirms that each requested change is consistent with applicable federal and state laws and regulations.

The project owner shall request from the District the verification to identify the ERCs used to offset the project emissions after the District has issued the Permit to Construct.

Certificate Number	Amount (lb/day)	Pollutant
AQ003679	8	VOC
AQ002683	1	VOC
Former AQ004209	117	VOC
Former AQ006303	100	VOC

**Verification:** At least 10 days prior to commencement of construction, the project owner shall provide CPM by email and post to the U.S. mail a copy of the SCAQMD approved Permit to Construct to show that the project's offset requirements have been met, by actual offset or exemption under Rule 1304(a)(2). ~~Prior to commencement of construction,~~ **The equipment shall not be operated unless** the project owner shall obtain sufficient RTCs to satisfy the District's requirements for the first year of operation as prescribed in Condition of Certification **AQ-16**. If the CPM approves a substitution or modification to the list of ERCs, the CPM shall file a statement of the approval with the project owner and commission docket. The CPM shall maintain an updated list of approved ERCs for the project.

**AQ-SC9 Deleted.** ~~If the project owner does not participate in the voluntary California Climate Action Registry, then the project owner shall report on a quarterly basis to the CPM the quantity of greenhouse gases (GHG) emitted as a direct result of facility electricity production as follows:~~

~~The project owner shall maintain a record of fuel use in units of million Btu (MMBtu) for all fuels burned on site for the purpose of power production. These fuels shall include but are not limited to: (1) all fuel burned in the combustion turbines, (2) HRSGs (if applicable) or auxiliary boiler (if applicable), and (3) all fuels used in any capacity for the purpose of turbine startup, shutdown, operation or emission controls.~~

~~The project owner may perform annual source tests of CO<sub>2</sub> and CH<sub>4</sub> emissions from the exhaust stacks while firing the facility's primary fuel, using the following test methods or other test methods as approved by the CPM. The project owner shall~~

~~produce fuel based emission factors in units of lbs GHG per MMBtu of fuel burned from the annual source tests. If a secondary fuel is approved for the facility, the project owner may also perform these source tests while firing the secondary fuel.~~

<b>Pollutant</b>	<b>Test Method</b>
CO <sub>2</sub>	EPA Method 3A
CH <sub>4</sub>	EPA Method 18 (VOC measured as CH <sub>4</sub> )

~~As an alternative to performing annual source tests, the project owner may use the Intergovernmental Panel on Climate Change (IPCC) Methodologies for Estimating Greenhouse Gas Emissions (MEGGE). If MEGGE is chosen, the project owner shall calculate the CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O emissions using the appropriate fuel based carbon content coefficient (for CO<sub>2</sub>) and the appropriate fuel based emission factors (for CH<sub>4</sub> and N<sub>2</sub>O).~~

~~The project owner shall convert the N<sub>2</sub>O and CH<sub>4</sub> emissions into CO<sub>2</sub> equivalent emissions using the following IPCC Global Warming Potentials (GWP): 310 for N<sub>2</sub>O (1 pound of N<sub>2</sub>O is equivalent to 310 pounds of CO<sub>2</sub>) and 21 for CH<sub>4</sub>.~~

~~The project owner shall maintain a record of all SF<sub>6</sub> that is used for replenishing on-site circuit breakers. At the end of each reporting period, the project owner shall total the mass of SF<sub>6</sub> used and convert that to a CO<sub>2</sub> equivalent emission using the IPCC GWP of 23,900 for SF<sub>6</sub>.~~

~~On a quarterly basis, the project owner shall report the CO<sub>2</sub> and CO<sub>2</sub> equivalent emissions from the described emissions of CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub> and SF<sub>6</sub>.~~

~~**Verification:** GHG emissions that are not reported to the California Climate Action Registry shall be reported to the CPM as part of the Quarterly Operation Reports required by condition of certification AQ-SC10.~~

#### District Conditions of Certification – Revised Determination of Compliance

**AQ-1** The project owner shall limit the emissions from each gas fired combustion turbine train exhaust stacks as follows:

Contaminant	Emissions Limit
PM10	2,592 lbs in any one month
VOC	1,035 lbs in any one month

For the purpose of this condition, the limit(s) shall be based on the emissions from a single exhaust stack. During commissioning, the VOC emissions shall not exceed 1,043 lbs in any one month.

The project owner shall calculate the emission limit(s) by using the monthly fuel use data and the following emission factors: PM10: 7.04 lb/mmcf and VOC: 2.73 lb/mmcf.

**The project owner shall limit emissions from the facility as follows:**

<u>Contaminant</u>	<u>Emissions Limit</u>
<u>PM2.5</u>	<u>Less than 60.89 TONS in ANY ONE YEAR</u>
<u>CO</u>	<u>Less than or equal to 112.96 TONS in ANY ONE YEAR</u>

**For the purpose of this condition, the PM emission limit shall be defined as particulate matter with aerodynamic diameter of 2.5 microns or less.**

**The CO emission limit of 112.96 tons per year in this condition shall only apply during non-commissioning years. The total annual CO emissions during the commissioning year shall not exceed 134.6 tons per year.**

**The project owner shall calculate the monthly emissions for PM2.5 and CO using the equation below and the following emission factors: PM2.5: 7.04 lbs/mmcf or an AQMD approved factor based on compliance test data. If any valid source test performed after January 1, 2013 shows a higher PM2.5 emission rate than the factor in this condition, then those test results shall be used to calculate emissions from the date of the test forward.**

**Monthly emissions, lb/month = x (EF); where x = monthly fuel usage in mmcf/month and EF = emission factor indicated above.**

**Compliance with the CO emission limit shall be verified through valid CEMS data.**

**The project owner shall calculate the emission limits for the purpose of determining compliance with the CO limit in the absence of valid CEMS data by using the above equation and the following emission factors:**

**A) During the commissioning period and prior to CO catalyst installation – 125.87 lb CO/mmcf.**

**B) After installation of the CO catalyst but prior to CO CEMS certification testing – 13.76 lb CO/mmcf. The emission rate shall be recalculated in accordance with condition AQ-10 if the approved CEMS certification test results in emission concentration higher than 4 ppmv.**

**C) After CO CEMS certification testing – 13.76 lb CO/mmcf. After CO CEMS certification test is approved by the AQMD, the emissions monitored by the**

**CEMS and calculated in accordance with condition AQ-10 shall be used to calculate emissions.**

**For the purpose of this condition, the yearly emission limit shall be defined as a period of 12 consecutive months determined on a rolling basis with a new 12 month period beginning on the first day of each calendar month.**

**Verification:** The project owner shall submit all emission calculations, fuel use, CEM records and a summary demonstrating compliance with all emission limits stated in this Condition for approval to the CPM on a quarterly basis in the quarterly emissions report (AQ-SC10).

- AQ-3** The 2.5 ppm NO<sub>x</sub> emission limit, 2.0 ppm VOC emission limit and the 4.0 ppm CO emission limit shall not apply during turbine commissioning, start-up and shutdown. The commissioning period shall not exceed 134 operating hours per turbine from the initial start-up. Following commissioning, start-ups shall not exceed 60 minutes for each startup and the number of start-ups shall not exceed 480 per year. Following commissioning, shutdowns shall not exceed 10 minutes for each shutdown. **Following commissioning,** the number of startups shall not exceed two per day per turbine. Written records of commissioning, start-ups and shutdowns shall be kept and made available to District and submitted to the CPM for approval. The 123.46 lb/mmcf NO<sub>x</sub> emission limit(s) shall only apply during interim reporting period during initial turbine commissioning and the ~~10.73~~<sup>10.29</sup> lbs/mmcf shall apply only during the interim reporting period after the initial turbine commissioning period, to report RECLAIM emissions. The interim period shall not exceed 12 months from the initial start-up date.

**Verification:** The project owner shall provide the District and the CPM with the written notification of the initial start-up date no later than 60 days prior to the startup date. The project owner shall submit, commencing one month from the time of gas turbine first fire, a monthly commissioning status report throughout the duration of the commissioning phase that demonstrates compliance with this condition and the emission limits of Condition AQ-13. The monthly commissioning status report shall include criteria pollutant emission estimates for each commissioning activity and total commissioning emission estimates. The monthly commissioning status report shall be submitted to the CPM until the report includes the completion of the initial commissioning activities. The project owner shall provide start-up and shutdown occurrence and duration data as part of the Quarterly Operation Report (AQ-SC10). The project owner shall make the site available for inspection of the commissioning and startup/shutdown records by representatives of the District, CARB and the Commission.

- AQ-11** The owner/operator shall determine the hourly ammonia slip emissions from each exhaust stack for each gas turbine train individually via ~~both~~ the following formula:

- District Requirement  
$$\text{NH}_3 \text{ (ppmv)} = [a - b * (c^{1.2}) / 1E6] * 1E6 / b$$

Where:

a = NH<sub>3</sub> injection rate (lb/hr) / 17(lb/lbmol),

b = dry exhaust flow rate (scf/hr) / 385.5 (scf/lbmol),

c = change in measured NO<sub>x</sub> across the SCR (ppmvd at 15% O<sub>2</sub>)

- The above described ammonia slip calculation procedure shall not be used for compliance determination or emission information determination without corroborative data using an approved reference method for the determination of ammonia for the District.

◆ ~~Energy Commission Requirement~~

~~NH<sub>3</sub> (ppmv @ 15% O<sub>2</sub>) = ((a \* b \* (c/1E6)) \* 1E6/b) \* d,~~

~~Where:~~

~~a = NH<sub>3</sub> injection rate (lb/hr) / 17 (lb/lbmol),~~

~~b = dry exhaust gas flow rate (lb/hr) / (29 (lb/lbmol)), or~~

~~b = dry exhaust flow rate (scf/hr) / 385.5 (scf/lbmol),~~

~~c = change in measured NO<sub>x</sub> concentration ppmv corrected to 15% O<sub>2</sub> across catalyst, and~~

~~d = correction factor.~~

~~The correction factor shall be derived through compliance testing by comparing the measured and calculated ammonia slip. The correction factor shall be reviewed and approved by the CPM on at least an annual basis. The correction factor may rely on previous compliance source test results or other comparable analysis as the CPM finds the situation warrants. The above described ammonia slip calculation procedure shall be used for Energy Commission compliance determination for the ammonia slip limit as prescribed in Condition of Certification AQ-4 and reported to the CPM on a quarterly basis as prescribed in Condition of Certification AQ-SC10.~~

~~An exceedance of the ammonia slip limit as demonstrated by the above Energy Commission formula shall not in and of itself constitute a violation of the limit. An exceedance of the ammonia slip limit shall not exceed 6 hours in duration. In the event of an exceedance of the ammonia slip limit exceeding 6 hours duration, the project owner shall notify the CPM within 72 hours of the occurrence. This notification must include, but is not limited to: the date and time of the exceedance, duration of the exceedance, estimated emissions as a result of the exceedance, the suspected cause of the exceedance and the corrective action taken or planned. Exceedances of the ammonia limit that are less than or equal to 6 hours in duration shall be noted in a specific section within the Quarterly Report (AQ-SC10). This section shall include, but is not limited to: the date and time of the exceedance, duration of the exceedance, and the estimated emissions as a result of the exceedance. Exceedances shall be deemed chronic if they total more than 10% of the operation for any single HRSG exhaust stack. Chronic exceedances must be investigated and redressed in a timely manner and in conjunction with the CPM through the cooperative development of a compliance plan. The compliance plan shall be developed to bring the project back into compliance first and foremost and shall~~

~~secondly endeavor to do so in a feasible and timely manner, but shall not be limited in scope.~~

~~The owner/operator shall maintain compliance with the ammonia slip limit, redress exceedances of the ammonia slip limit in a timely manner, and avoid chronic exceedances of the ammonia slip limit. Exceedances shall be deemed a violation of the ammonia slip limit if they are not properly redressed as prescribed herein.~~

The owner/operator shall install a NOx analyzer to measure the SCR inlet NOx ppm accurate to within +/- 5 percent calibrated at least once every 12 months.

**Verification:** The project owner shall include ammonia slip concentrations averaged on an hourly basis calculated via ~~both protocols~~ the District Requirement protocol provided as part of the Quarterly Operational Report required in Condition of Certification AQ-SC10. The project owner shall submit all calibration results performed to the CPM within 60 days of the calibration date. ~~The project owner shall submit to the CPM for approval a proposed correction factor to be used in the Energy Commission formula at least once a year but not to exceed 180 days following the completion of the annual ammonia compliance source test. Exceedances of the ammonia limit shall be reported as prescribed herein. Chronic exceedances of the ammonia slip limit shall be identified by the project owner and confirmed by the CPM within 60 days of the fourth quarter Quarterly Operational Report (AQ-SC10) being submitted to the CPM. If a chronic exceedance is identified and confirmed, the project owner shall work in conjunction with the CPM to develop a reasonable compliance plan to investigate and redress the chronic exceedance of the ammonia slip limit within 60 days of the above confirmation.~~

- AQ-13** The operator shall install and maintain a temperature gauge and recorder to accurately indicate and record the temperature in the exhaust at the inlet of the SCR reactor. The gauge shall be accurate to within plus or minus 5 percent and shall be calibrated once every twelve months.

Continuously recording is defined for this condition as at least once every hour and is based on the average of the continuous monitoring for that hour.

Under any operating condition, including start-up, the maximum operating temperature shall not exceed 840~~750~~° F.

**Verification:** The project owner shall submit to the CPM no less than 30 days after installation, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built designs or inspected the identified equipment and certifies that the appropriate device has been installed and is functioning properly. The project owner shall submit annual calibration results within 30 days of their successful completion.



- AQ-14** The operator shall install and maintain a pressure gauge and recorder to accurately indicate and record the pressure differential across the SCR catalyst bed in inches of water column. The gauge shall be accurate to within plus or minus 5 percent and shall be calibrated once every twelve months.

Continuously recording is defined for this condition as at least once every month and is based on the average of the continuous monitoring for that month.

Under any operating condition, including start-up, the maximum operating pressure shall not exceed 127.6 inches of water.

**Verification:** The project owner shall submit to the CPM no less than 30 days after installation, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that the appropriate device has been installed and is functioning properly. The project owner shall submit annual calibration results within 30 days of their successful completion.

- AQ-16** The project equipment shall not be operated unless the project owner demonstrates to the SCAQMD Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year of operation. In addition, this equipment shall not be operated unless the project owner demonstrates to the Executive Officer that, at the commencement of each compliance year after the first compliance year of operation, the facility hold sufficient RTCs in an amount equal to the annual emission increase. The project owner shall submit all such information to the CPM for approval. To comply with this condition, **for each individual gas turbine, the project owner shall hold a minimum of 43,68243,900 lbs/year of NO<sub>x</sub> RTCs and 2,280 lbs/year of SO<sub>x</sub> RTCs for the first year of operation (commissioning year) and 35,24035,458 lbs/year of NO<sub>x</sub> RTCs and 2,280 lbs/year of SO<sub>x</sub> RTCs thereafter (operating year). In addition, for the emergency fire pump the project owner shall hold a minimum of 218 lbs/year of NO<sub>x</sub> RTCs for both commissioning year and operating years.**

**Verification:** The project owner shall submit all identified evidence demonstrating compliance to the CPM on an annual basis as part of the annual compliance report.

- AQ-17** ~~The project owner shall conduct one source test over the lifetime of the project for NO<sub>x</sub> and PM<sub>10</sub> on each gas turbine exhaust stack in accordance with the following requirements:~~

- ~~• The project owner shall submit a source test protocol to the AQMD and the CPM 45 days prior to the proposed source test date for approval. The protocol shall include the proposed operating conditions of the gas turbine, the correction and degradation factors and documentation of their validity, the identity of the testing~~

~~lab, a statement from the lab certifying that it meets the criteria of AQMD Rule 304, and a description of all sampling and analytical procedures.~~

- ~~• The initial source test shall be conducted no later than 180 days following the date of first fire.~~
- ~~• The AQMD and CPM shall be notified at least 10 days prior to the date and time of the source test.~~
- ~~• The source test shall be conducted with the gas turbine operating under maximum load.~~
- ~~• The test shall be conducted in accordance with AQMD approved test protocol. The source test shall be conducted for the pollutants listed using the methods, averaging times, and test locations indicated and as approved by the CPM:~~

Pollutant	Method	Averaging Time	Test Location
NO <sub>x</sub>	<del>AQMD Method 100.1</del>	1 hour	Outlet of SCR
PM <sub>10</sub>	<del>AQMD approved method</del>	<del>AQMD approved averaging time</del>	Outlet of SCR

- ~~• The source test results shall be submitted to the AQMD and the CPM no later than 60 days after the source test was conducted.~~
- ~~• The test results shall demonstrate compliance with the following emission limits as required by AQMD Rule 1309.1:~~
  - ~~• PM<sub>10</sub> emission rates shall not exceed 0.060 lb/MW-hr.~~
  - ~~• NO<sub>x</sub> emission rates shall not exceed 0.080 lb/MW-hr.~~
- ~~• If the actual measurement is within the accuracy of the devices used for electrical power measurement, the result will be acceptable.~~
- ~~• The lb/MW-hr emission rate of each electrical generating unit for each pollutant (NO<sub>x</sub> and PM<sub>10</sub>) shall be determined by dividing (a) the lb/hr emission rate measured at the location and in accordance with the test method specified above, by (b) the adjusted gross electrical output of each electrical generating unit.~~
- ~~• The adjusted gross electrical output of each electrical generating unit shall be determined by making the following adjustments to the measured gross electrical output:~~
  - ~~• Apply the manufacturer's standard correction factors to calculate gross electrical output at ISO conditions.~~
  - ~~• Apply the GE site-specific LMS100 power degradation curve to adjust measured gross electrical output, as corrected to ISO conditions, to undegraded electrical generating unit conditions as defined by the turbine~~

~~manufacturer. The maximum power degradation adjustment shall not exceed 1 percent.~~

~~**Verification:** The project owner shall submit the proposed protocol for the initial source tests at least 45 days prior to the proposed source test date to both the AQMD and CPM for approval. The project owner shall submit source test results no later than 60 days following the source test date to both the AQMD and CPM. The project owner shall notify the AQMD and CPM no later than 10 days prior to the proposed initial source test date and time.~~

**AQ-19** The project owner shall not start operation of any equipment **except emergency Internal combustion engine (ICE) device** until both boiler units 3 and 4 currently located at AES Huntington Beach Generating Station have been retired and permits for boilers 3 and 4 have been surrendered to the SCAQMD.

**Verification:** The project owner shall provide by email and post to the U.S. mail evidence demonstrating that they have surrendered the permits to operate for Huntington Beach boilers 3 and 4 prior to the first turbine fire. The project owner shall make the site available for inspection by representatives of the District, CARB, EPA and the Commission. In addition, the project owner shall make Huntington Beach boiler units 3 and 4 available for inspection to confirm shutdown of these boilers by representatives of the District, CARB, EPA and the Commission.

**IT IS SO ORDERED.**

**CERTIFICATION**

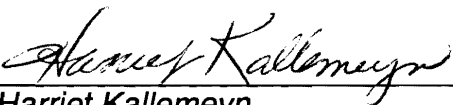
*The undersigned Secretariat to the Commission does hereby certify that the foregoing is a full, true, and correct copy of an Order duly and regularly adopted at a meeting of the California Energy Commission held on November 14, 2012.*

**AYE:** Weisenmiller, Douglas, Peterman, McAllister

**NAY:** None

**ABSENT:** None

**ABSTAIN:** None

  
\_\_\_\_\_  
Harriet Kallemeyn,  
Secretariat